

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P911356

Luminaire Tested: DFN2DIP-PN4F0-040D110US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911356
REPORT IS A COMBINATION OF REPORTS P899735 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D110US850-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

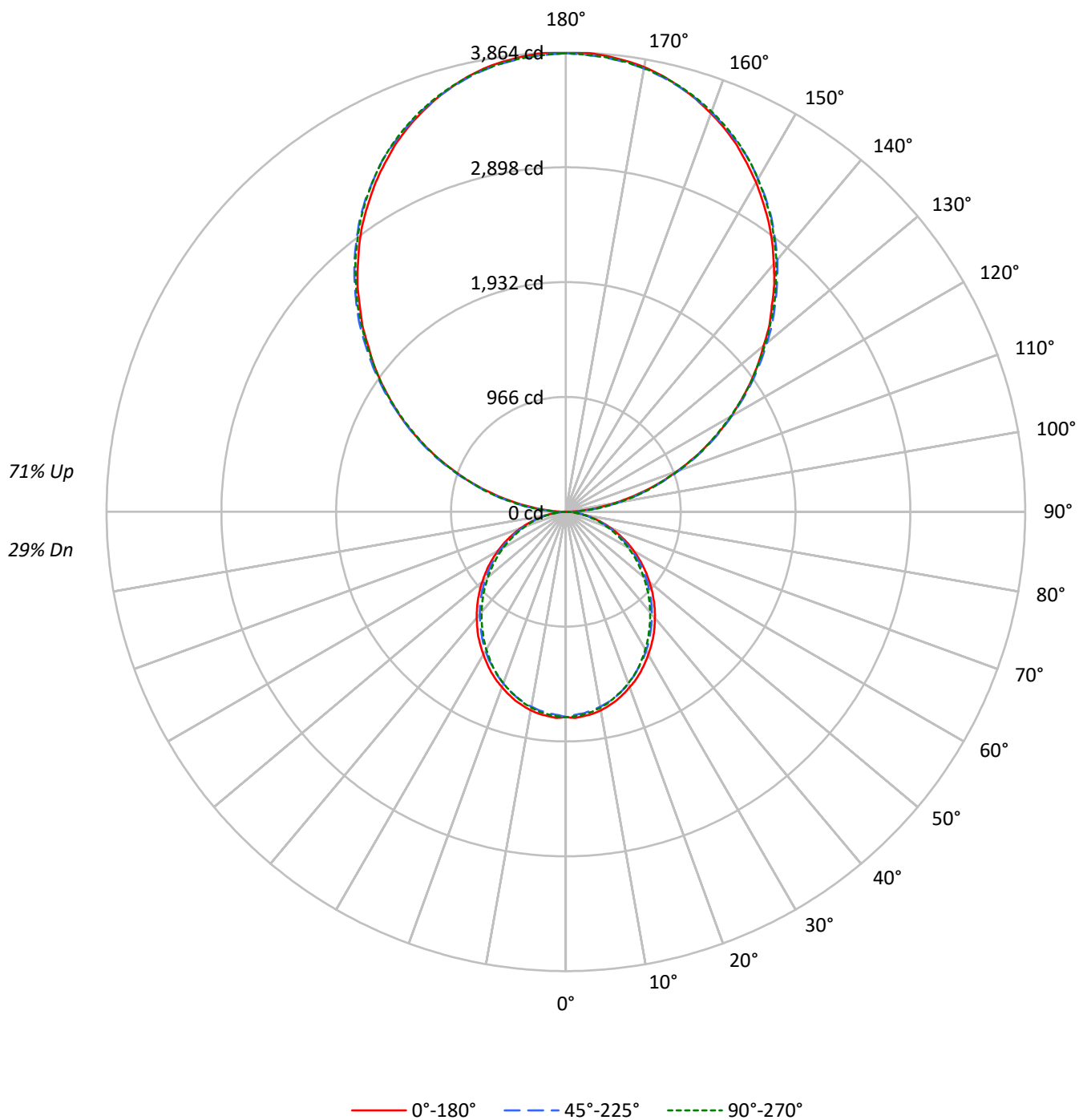
Lumens per Lamp: N/A
Luminaire Lumens: 15187.7 lumens
Efficiency: N/A
Efficacy: 121.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 125
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911356

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US850-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P911356

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US850-FLLFL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37
1	93	89	85	82	83	80	77	74	63	61	59	47	46	44	32	32	31
2	85	78	72	67	76	70	65	60	55	51	48	41	39	37	29	27	26
3	77	68	61	55	69	61	55	50	48	44	41	36	34	31	25	24	22
4	71	60	53	47	63	54	48	43	43	38	35	32	29	27	23	21	19
5	65	53	46	40	58	48	41	36	38	33	30	29	26	23	20	18	17
6	59	48	40	34	53	43	36	31	34	29	26	26	23	20	18	16	15
7	55	43	35	30	49	39	32	27	31	26	23	24	20	18	17	15	13
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	15	13	12
9	47	35	28	23	42	32	26	21	26	21	18	20	16	14	14	12	10
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1260	1260	1260
5°	1262	1243	1251
10°	1252	1226	1234
15°	1233	1206	1208
20°	1208	1178	1181
25°	1184	1145	1150
30°	1153	1114	1110
35°	1123	1077	1069
40°	1087	1040	1029
45°	1051	1003	988
50°	1012	964	941
55°	970	919	897
60°	924	866	848
65°	873	810	789
70°	808	743	726
75°	718	663	668
80°	610	559	557
85°	441	382	373

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3021 cd/sqm

TEST NUMBER: P911356

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US850-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.5	1.1
10°-20°	457.1	3.0
20°-30°	671.7	4.4
30°-40°	780.2	5.1
40°-50°	779.2	5.1
50°-60°	679.5	4.5
60°-70°	502.3	3.3
70°-80°	284.2	1.9
80°-90°	86.0	0.6
90°-100°	238.7	1.6
100°-110°	758.6	5.0
110°-120°	1298.1	8.5
120°-130°	1707.2	11.2
130°-140°	1916.3	12.6
140°-150°	1879.1	12.4
150°-160°	1576.3	10.4
160°-170°	1045.4	6.9
170°-180°	365.4	2.4
0°-30°	1291.3	8.5
0°-40°	2071.5	13.6
0°-60°	3530.2	23.2
0°-90°	4402.6	29.0
90°-120°	2295.4	15.1
90°-150°	7798.0	51.3
90°-180°	10785.0	71.0
0°-180°	15187.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1726	1726	1726	1726	1726	
5°	1726	1720	1701	1714	1711	164
15°	1643	1633	1612	1618	1610	463
25°	1487	1474	1446	1449	1446	684
35°	1283	1266	1240	1230	1222	801
45°	1044	1032	1007	989	983	806
55°	790	780	760	740	732	706
65°	533	523	506	491	483	527
75°	279	276	267	257	261	298
85°	68	66	65	60	58	76
90°	3	42	114	107	110	15
95°	170	202	208	208	202	189
105°	700	710	716	722	722	739
115°	1303	1321	1316	1312	1303	1288
125°	1895	1924	1914	1904	1900	1693
135°	2451	2487	2494	2490	2481	1894
145°	2975	2998	3017	3021	3008	1859
155°	3402	3411	3422	3438	3428	1566
165°	3701	3698	3698	3721	3704	1044
175°	3851	3842	3835	3858	3838	366
180°	3858	3858	3858	3858	3858	

TEST NUMBER: P911356

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US850-FLLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1726.0	1726.0	1726.0	1726.0	1726.0
2.5°	1736.1	1727.8	1709.5	1726.0	1722.9
5°	1726.0	1719.5	1701.2	1714.4	1711.3
7.5°	1714.4	1704.5	1686.2	1699.7	1696.3
10°	1696.3	1684.7	1664.8	1678.0	1673.0
12.5°	1671.3	1661.4	1641.5	1649.9	1646.4
15°	1643.1	1633.2	1611.6	1618.3	1610.0
17.5°	1608.3	1598.4	1576.8	1585.0	1576.8
20°	1570.0	1560.1	1537.0	1541.8	1535.4
22.5°	1532.0	1517.0	1495.4	1495.4	1492.0
25°	1487.1	1473.9	1445.7	1448.9	1445.7
27.5°	1437.3	1425.6	1404.2	1399.2	1391.0
30°	1387.6	1374.3	1349.4	1344.4	1337.8
32.5°	1334.5	1324.6	1298.0	1288.0	1281.2
35°	1283.0	1266.5	1239.9	1229.9	1221.6
37.5°	1224.9	1209.9	1183.3	1171.8	1163.5
40°	1165.2	1151.8	1125.2	1110.4	1103.8
42.5°	1107.1	1093.7	1067.3	1050.6	1040.7
45°	1044.0	1032.5	1007.4	989.3	982.6
47.5°	982.6	970.9	944.4	926.1	916.3
50°	917.8	909.5	886.3	863.0	854.7
52.5°	854.7	843.2	821.7	803.4	791.7
55°	790.2	780.1	760.2	740.3	732.1
57.5°	725.3	717.1	695.3	675.5	668.8
60°	660.5	654.0	630.8	612.5	607.5
62.5°	597.5	585.9	569.4	552.7	546.1
65°	532.9	522.8	506.3	491.3	483.1
67.5°	466.4	458.0	443.3	431.6	425.0
70°	405.0	398.4	383.4	371.7	365.2
72.5°	342.0	335.3	327.0	315.4	310.4
75°	278.8	275.6	267.2	257.3	260.6
77.5°	222.4	215.7	212.4	207.4	202.5
80°	166.0	164.2	160.9	156.0	152.7
82.5°	112.9	112.9	111.3	104.6	104.6
85°	68.0	66.4	64.8	59.7	58.1
87.5°	29.9	26.6	23.3	18.3	16.5
90°	3.4	41.9	114.0	107.0	110.5
92.5°	72.1	97.7	101.1	104.7	104.7
95°	169.8	202.4	208.2	208.2	202.4
97.5°	282.7	312.8	325.7	325.7	325.7
100°	412.9	439.6	448.9	448.9	445.5
102.5°	550.2	569.9	582.8	586.2	582.8
105°	700.2	709.5	716.5	722.3	722.3
107.5°	849.1	863.0	863.0	865.4	849.1
110°	993.3	1012.0	1012.0	1012.0	1002.6

TEST NUMBER: P911356

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US850-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1149.1	1168.9	1165.4	1156.1	1149.1
115°	1302.7	1321.3	1315.5	1312.1	1302.7
117.5°	1455.1	1480.6	1464.3	1455.1	1445.8
120°	1608.6	1634.2	1608.6	1608.6	1598.2
122.5°	1748.2	1780.7	1764.4	1755.1	1748.2
125°	1894.7	1923.8	1914.5	1904.0	1900.5
127.5°	2037.8	2073.8	2061.1	2047.1	2037.8
130°	2171.5	2213.5	2207.6	2200.6	2187.8
132.5°	2321.6	2354.2	2356.5	2340.2	2330.9
135°	2450.7	2486.7	2493.7	2490.3	2480.9
137.5°	2594.9	2624.0	2629.8	2627.4	2613.6
140°	2721.7	2750.8	2767.1	2767.1	2754.3
142.5°	2852.0	2881.1	2890.4	2893.8	2881.1
145°	2975.2	2998.5	3017.1	3020.6	3007.8
147.5°	3085.8	3114.8	3128.8	3134.6	3121.8
150°	3199.8	3219.5	3232.3	3242.8	3232.3
152.5°	3300.9	3320.7	3337.0	3349.8	3337.0
155°	3402.2	3411.4	3421.9	3438.2	3427.7
157.5°	3489.4	3496.3	3502.1	3525.4	3509.1
160°	3567.3	3574.3	3577.7	3597.6	3583.6
162.5°	3639.4	3639.4	3643.0	3665.0	3648.7
165°	3701.1	3697.5	3697.5	3720.8	3704.5
167.5°	3756.8	3746.4	3746.4	3769.7	3753.4
170°	3798.8	3789.5	3786.0	3809.2	3789.5
172.5°	3827.8	3818.5	3815.1	3838.4	3818.5
175°	3851.1	3841.8	3834.8	3858.1	3838.4
177.5°	3863.9	3854.6	3847.6	3867.4	3847.6
180°	3858.1	3858.1	3858.1	3858.1	3858.1



TEST NUMBER: P911356

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US850-FLLFLL

CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	5.72	6.42	6.84	7.54	9.08	5.28	5.98	6.40	7.10	8.64
	3H	7.38	8.00	8.50	9.12	10.68	6.89	7.52	8.02	8.64	10.20
	4H	7.96	8.55	9.09	9.67	11.24	7.47	8.07	8.61	9.19	10.75
	6H	8.35	8.90	9.50	10.02	11.60	7.86	8.41	9.00	9.53	11.11
	8H	8.45	8.97	9.60	10.11	11.68	7.96	8.48	9.11	9.62	11.19
	12H	8.50	8.99	9.65	10.12	11.72	8.00	8.49	9.15	9.62	11.22
4H	2H	6.17	6.76	7.31	7.88	9.45	5.81	6.41	6.96	7.53	9.10
	3H	8.02	8.52	9.17	9.66	11.24	7.62	8.11	8.77	9.26	10.84
	4H	8.73	9.19	9.88	10.32	11.92	8.31	8.77	9.46	9.91	11.50
	6H	9.24	9.63	10.40	10.79	12.38	8.81	9.21	9.97	10.36	11.95
	8H	9.39	9.75	10.54	10.90	12.51	8.96	9.32	10.11	10.47	12.08
	12H	9.45	9.78	10.63	10.95	12.55	9.01	9.34	10.19	10.51	12.11
8H	4H	8.91	9.28	10.07	10.43	12.03	8.54	8.91	9.70	10.06	11.66
	6H	9.54	9.84	10.72	11.04	12.64	9.16	9.47	10.34	10.66	12.26
	8H	9.76	10.03	10.95	11.20	12.82	9.38	9.64	10.56	10.81	12.43
	12H	9.89	10.12	11.08	11.29	12.94	9.49	9.72	10.67	10.89	12.54
12H	4H	8.89	9.22	10.07	10.39	11.99	8.53	8.86	9.70	10.02	11.63
	6H	9.57	9.83	10.75	11.00	12.62	9.21	9.47	10.39	10.64	12.26
	8H	9.81	10.04	10.99	11.21	12.86	9.43	9.67	10.62	10.83	12.49

END OF REPORT